

**Abstract Submitted for the Forty-Eighth Annual Meeting
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Category Number and Subject: 5.6.2. DIII-D Tokamak

[] Theory [x] Experiment

Dependence of ELM Control Using RMPs in DIII-D on Plasma Shape and Toroidal Rotation,* S.L. Allen, M.E. Fenstermacher, C.J. Lasnier, *LLNL*, T.E. Evans, K.H. Burrell, A.W. Leonard, T.H. Osborne, W.P. West, *GA*, R.A. Moyer, I. Joseph, *UCSD*, J.G. Watkins, *SNL*, and the DIII-D Team – The size and frequency of Type-I ELMs has been controlled in DIII-D H-mode plasmas using $n=3$ resonant magnetic perturbations (RMPs) produced by an internal coil. The operating space of ELM control has been expanded to include both low and high triangularity shapes for both low and high pedestal collisionalities. The dependence of the ELM control on density, power, plasma beta and RMP amplitude in an ITER similar shape (ISS) will be compared with previous results [1-3] in a lower average triangularity (LAT) shape. New results showing the effect of toroidal rotation on the RMP assisted ELM control will also be presented and compared with available theories [4] for the screening of the RMP fields by a rotating plasma.

- [1] T.E. Evans, *Nat. Phys.* **2**, 419 (2006).
- [2] T.E. Evans, *Phys. Plasmas* **13**, 056121 (2006).
- [3] R.A. Moyer, *Phys. Plasmas* **12**, 056119 (2005).
- [4] R. Fitzpatrick, *Phys. Plasmas* **5**, 3325 (1998).

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